

Access DB# 91815**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Jim Sells Examiner #: 69417 Date: 4/18/03  
Art Unit: 1734 Phone Number 308-2010 Serial Number: 09175982B  
Mail Box and Bldg/Room Location: CP3 6005 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

US Pat # 5,858,142

No Cases Reported

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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: <u>Mellerson</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: <u>8-4483</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: <u>CP3/4 3D62</u>	Structure (#) _____	Questel/Orbit <u>2808</u>
Date Searcher Picked Up: <u>4/18/03</u>	Bibliographic _____	Dr.Link _____
Date Completed: <u>4/18/03</u>	Litigation <input checked="" type="checkbox"/>	Lexis/Nexis <u>40.00</u>
Searcher Prep & Review Time: <u>2</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>8</u>	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

## Current session 18/04/2003

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QUESTEL.ORBITE (TM) 1998

18/04/03 18\*21\*08

Last connection: 15/04/03 20\*51\*44

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- replaces WOTEXT, new contents and prices, see INFO PCTFULL  
- IMAGINATION: Version 3.1 is available, see INFO VERSION  
- SEMARK: Swedish Trademarks - INFO SEMARK  
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## Query/Command : FILE PLUSPAT

QUESTEL - Time in minutes : 0,69

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standard price list

	Estimated cost :	0.64 USD
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Estimated total session cost :		0.64 USD

Selected file: PLUSPAT

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New Patent Citation Commands &amp; FAM Citation Report - see INFO PATCITE

Last update of file: 2003/04/16 (YYYY/MM/DD) 2003-15/UP (basic update)

Search statement 1

## Query/Command : US5858142/PN

## \*\* SS 1: Results 1

Search statement 2

## Query/Command : PRT FULL NONSTOP LEGALALL

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*1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image*

PN - US5858142 A 19990112 [US5858142]  
TI - (A) Angular orientation control system for friction welding  
PA - (A) INERTIA FRICTION WELDING INC (US)

**PA0** - Inertia Friction Welding, Inc., South Bend IN [US]  
**IN** - (A) TULLY LOWELL R (US); JOHNSON STEPHEN A (US); KONIECZNY DAVE (US)  
 STEPHEN R (US)  
**AP** - US98749397 19971209 [1997US-0987493]  
**PR** - US3833297P 19970227 [1997US-P038332]  
 US98749397 19971209 [1997US-0987493]  
**IC** - (A) B29C-065/06  
**EC** - B23K-020/12C  
 B29C-065/06B &F4  
**PCL** - ORIGINAL (O) : 156073500; CROSS-REFERENCE (X) : 156064000 156580000 2281145  
**DT** - Basic  
**CT** - US4552609; US4552612; US4584037; US4741788; US4743331; US5064485; US5108539;  
 US5152855  
**STG** - (A) United States patent  
**AB** - A method of friction welding first and second parts together at an angular orientation relativ  
 includes the steps of mounting the first part in a spindle for axial rotation and the second par  
 rotatable holder. The spindle is then rotated and the angular orientation of the first part relati  
 part is determined at any specific time. The holder is moved toward the spindle to bring the  
 frictional contact with the first part at a selected one of the specific times that the angular or  
 determined. Accordingly, due to frictional contact, the respective contacting surface of the p  
 The speed of the rotation of the spindle is then decreased and the holder is moved toward th  
 forcibly urge the first and second parts together at the contacting surface. Rotation of the spi  
 a specific determined angular orientation of the first part relative to the second part while co  
 forcibly urge the parts together to allow cooling and fused solidification of the contacting su

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/// LGST - ©LEGSTAT

**PN** - US 5858142 [US5858142]  
**AP** - US 987493/97 19971209 [1997US-0987493]  
**DT** - US-P  
**ACT** - 19971209 US/AE-A  
 APPLICATION DATA (PATENT)  
 US 987493/97 19971209 [1997US-0987493]  
  
 19971209 US/AS02  
 ASSIGNMENT OF ASSIGNOR'S INTEREST  
 INERTIA FRICTION WELDING, INC. P.O. BOX 1108 SOUTH BEND, INDIANA 46624  
 LOWELL R. : 19971205; JOHNSON, STEPHEN A. : 19971205; KONIECZNY, DAVE : 1  
 STEPHEN R. : 19971205  
  
 19990112 US/A  
 PATENT  
**UP** - 2000-08

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/// CRXX - ©CLAIMS/RRX

**PN** - 5,858,142 A 19990112 [US5858142]

PA - Inertia Friction Welding Inc  
ACT - 20020730 REASSIGNED  
MERGER

Assignor: INERTIA FRICTION WELDING, INC. DATE SIGNED: 12/26/2001

Assignee: S.S.D. CONTROL TECHNOLOGY, INC. P.O. BOX 4189 1801 SOUTH MAIN  
BEND INDIANA 46634

Reel 013128/Frame 0571

Contact: MARSHALL, GERSTEIN & BORUN DAVID C. READ 233 S. WACKER DRIV  
CHICAGO, IL 60606-6357

Query/Command : FILE INPADOC

PLUSPAT - Time in minutes : 0,47  
The cost estimation below is based on Questel's  
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Records displayed and billed :	1
Estimated cost :	1.25 USD
Cost estimated for the last database search :	2.34 USD
Estimated total session cost :	2.98 USD

LGST - Time in minutes : 0,06  
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Estimated cost :	0.07 USD
Records displayed and billed :	1
Estimated cost :	0.60 USD
Cost estimated for the last database search :	0.67 USD
Estimated total session cost :	3.65 USD

CRXX - Time in minutes : 0,07  
The cost estimation below is based on Questel's  
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Estimated cost :	0.12 USD
Records displayed and billed :	1
Estimated cost :	5.30 USD
Cost estimated for the last database search :	5.42 USD
Estimated total session cost :	9.07 USD

LITA - Time in minutes : 0,02  
The cost estimation below is based on Questel's  
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Estimated cost :	0.04 USD
Cost estimated for the last database search :	0.04 USD
Estimated total session cost :	9.11 USD

Selected file: INPADOC

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Search statement 1

Query/Command : FAM US5858142/PN

1 Patent Groups

\*\* SS 1: Results 1

Search statement 2

Query/Command : FAMSTATE NONSTOP

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1 / 1 INPADOC - ©INPADOC

PN - US 5858142 A 19990112 [US5858142]  
TI - ANGULAR ORIENTATION CONTROL SYSTEM FOR FRICTION WELDING  
IN - TULLY LOWELL R [US]; JOHNSON STEPHEN A [US]; KONIECZNY DAVE [US]; ES [US]  
PA - INERTIA FRICTION WELDING INC [US]  
AP - US 987493/97-A 19971209 [1997US-0987493]  
PR - US 987493/97-A 19971209 [1997US-0987493]  
US 38332/97-P 19970227 [1997US-P038332]  
IC - B29C-065/06

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1 / 1 LEGALI - ©LEGSTAT

PN - US 5858142 [US5858142]  
AP - US 987493/97 19971209 [1997US-0987493]  
DT - US-P  
ACTE - 19971209 US/AE-A  
APPLICATION DATA (PATENT)  
US 987493/97 19971209 [1997US-0987493]  
  
19971209 US/AS02  
ASSIGNMENT OF ASSIGNOR'S INTEREST  
INERTIA FRICTION WELDING, INC. P.O. BOX 1108 SOUTH BEND, INDIANA 46624  
LOWELL R. : 19971205; JOHNSON, STEPHEN A. : 19971205; KONIECZNY, DAVE : 1  
STEPHEN R. : 19971205  
  
19990112 US/A  
PATENT  
UP - 2000-08

PATNO IS 5858142

DATE: APRIL 18, 2003  
LIBRARY: PATENT  
FILE: ALL

Your search request is:  
PATNO IS 5858142

Number of PATENTS found with your search request through:  
LEVEL 1... 1

Your search request has found 1 PATENT through Level 1.  
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To MODIFY your search request, press the M key (for MODIFY) and then the ENTER key.

For further explanation, press the H key (for HELP) and then the ENTER key.

LEVEL 1 - 1 PATENT

1. 5858142 , January 12, 1999 , Angular orientation control system for friction welding, Tully, Lowell R., Elkhart, IN; Johnson, Stephen A., South Bend, IN; Konieczny, Dave, Union Mills, IN; Estes, Stephen R., South Bend, IN, 987493 (08), Inertia Friction Welding, Inc., South Bend, IN, December 9, 1997 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., INERTIA FRICTION WELDING, INC. P.O. BOX 1108 SOUTH BEND INDIANA 46624, Reel and Frame Number: 009222/0508

CORE TERMS: rem, spindle, workpiece, weld, rotation, phase, computer, orientation, friction, angular ...

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

5858142

<=1> GET 1st DRAWING SHEET OF 7

January 12, 1999

Angular orientation control system for friction welding

APPL-NO: 987493 (08)

FILED-DATE: December 9, 1997

GRANTED-DATE: January 12, 1999

CORE TERMS: rem, spindle, workpiece, weld, rotation, phase, computer, orientation, friction, angular ...

ENGLISH-ABST:

A method of friction welding first and second parts together at an angular orientation relative to each other includes the steps of mounting the first part in a spindle for axial rotation and the second part in a non-rotatable holder. The spindle is then rotated and the angular orientation of the first part relative to the second part is determined at any specific time. The holder is moved toward the spindle to bring the second part into frictional contact with the first part at a selected one of the specific times that the angular orientation is determined. Accordingly, due to frictional contact, the respective contacting surface of the parts are melted. The speed of the rotation of the spindle is then decreased and the holder is moved toward the spindle to forcibly urge the first and second parts together at the contacting surface. Rotation of the spindle is stopped at a specific determined angular orientation of the first part relative to the second part while continuing to forcibly urge the parts together to allow cooling and fused solidification of the contacting surfaces.



5858142 OR 5,858,142

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